SANTA CRUZ BIOTECHNOLOGY, INC.

SERCA3 (N-19): sc-8097

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

ATP dependent calcium pumps are responsible, in part, for the maintenance of low cytoplasmic free calcium concentrations. The ATP pumps that reside in intracellular organelles are encoded by a family of structurally related enzymes, termed the sarcoplasmic or endoplasmic reticulum calcium (SERCA) ATPases. The sarcoplasmic reticulum of striated muscle is a specialized intracellular membrane system that plays a critical role in the contraction and relaxation of muscle. The SERCAs mediate Ca^{2+} uptake into intracellular stores. SERCA-mediated Ca^{2+} uptake induces and maintains muscular relaxation. The SERCA1 gene is exclusively expressed in type II (fast) skeletal muscle. The SERCA2 gene is subject to tissue-dependent processing which is responsible for the generation of the SERCA2a muscle-specific form expressed in type I (slow) skeletal, cardiac and smooth muscle, and the SERCA2b isoform expressed in all cell types. The SERCA3 gene is not as well characterized and is found in non-muscle cells. SERCA2 plays an important part in regulating cardiac contractile function. SERCA3 is an isoform expressed in several cell types including platelets, lymphoid cells and mast cells. SERCA1, SERCA2 and SERCA3 all undergo alternative splicing.

CHROMOSOMAL LOCATION

Genetic locus: ATP2A3 (human) mapping to 17p13.2; Atp2a3 (mouse) mapping to 11 B4.

SOURCE

SERCA3 (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of SERCA3 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-8097 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

SERCA3 (N-19) is recommended for detection of SERCA3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for SERCA3 siRNA (h): sc-41295, SERCA3 siRNA (m): sc-41296, SERCA3 shRNA Plasmid (h): sc-41295-SH, SERCA3 shRNA Plasmid (m): sc-41296-SH, SERCA3 shRNA (h) Lentiviral Particles: sc-41295-V and SERCA3 shRNA (m) Lentiviral Particles: sc-41296-V.

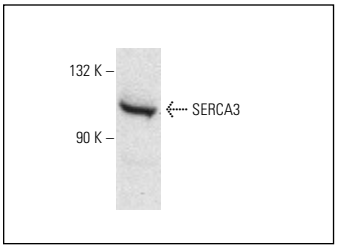
Molecular Weight of SERCA3: 97 kDa.

Positive Controls: human platelet whole cell lysate: sc-363773 or HL-60 whole cell lysate: sc-2209.

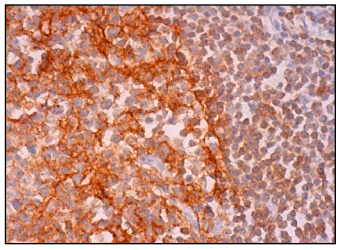
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



SERCA3 (N-19): sc-8097. Western blot analysis of SERCA3 expression in human platelet whole cell lysate.



SERCA3 (N-19): sc-8097. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node tissue showing cytoplasmic and membrane staining of cells in germinal center and cells in non-germinal center.

SELECT PRODUCT CITATIONS

1. Parsons, J.T., et al. 2004. Neuronal-specific endoplasmic reticulum Mg^{2+}/Ca^{2+} ATPase Ca^{2+} sequestration in mixed primary hippocampal culture homogenates. Anal. Biochem. 330: 130-139.
2. Anhê, G.F., et al. 2007. Signal transducer and activator of transcription 3-regulated sarcoendoplasmic reticulum Ca^{2+}-ATPase 2 expression by prolactin and glucocorticoids is involved in the adaptation of Insulin secretory response during the peripartum period. J. Endocrinol. 195: 17-27.
3. Blanchard, A.P., et al. 2008. Memantine potentiates agonist-induced Ca^{2+} responses in HEK293 cells. Cell. Physiol. Biochem. 22: 205-214.
4. Barro-Soria, R., et al. 2010. ER-localized bestrophin 1 activates Ca^{2+}-dependent ion channels TMEM16A and SK4 possibly by acting as a counterion channel. Pflugers Arch. 459: 485-497.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.